Hypertension Practical Challenges in Diagnosis &treatment

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AIM OF THE LECTURE

1) To attract the attention to the size of this health problem which we face
2) Discuss the challenges in clinical diagnosis of hypertension& how to improve it
3) Why hypertension is not controlled in treated patients
4) Activating Iraqi official a policy for increasing awareness & diagnosis of hypertension

HYPERTENSION PREVALENCE

1.28 billion Hypertensive aged 30-79 years

46 % are Unaware.

42% are Diagnose & treated

21% are controlled

One of the global targets for non-communicable diseases is to reduce the prevalence of hypertension by 33% between 2010 and 2030

Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants

*NCD Risk Factor Collaboration (NCD-RisC)**

Summary

Background Hypertension can be detected at the primary health-care level and low-cost treatments can effectively control hypertension. We aimed to measure the prevalence of hypertension and progress in its detection, treatment, and control from 1990 to 2019 for 200 countries and territories.

Methods We used data from 1990 to 2019 on people aged 30–79 years from population-representative studies with measurement of blood pressure and data on blood pressure treatment. We defined hypertension as having systolic blood pressure 140 mm Hg or greater, diastolic blood pressure 90 mm Hg or greater, or taking medication for hypertension. We applied a Bayesian hierarchical model to estimate the prevalence of hypertension and the proportion of people with hypertension who had a previous diagnosis (detection), who were taking medication for hypertension (treatment), and whose h[illegible]. The model allowed for trends over time to be non-[illegible]

Findings The number of [illegible] aged 30–79 years with hypertension doubled from 1990 to 2019, from 331 (95% [illegible]

Lancet 2021; 398: 957–80

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This online publication has been corrected. The corrected version first appeared at thelancet.com on February 3, 2022

See **Comment** page 932

*NCD-RisC members listed at the end of the manuscript

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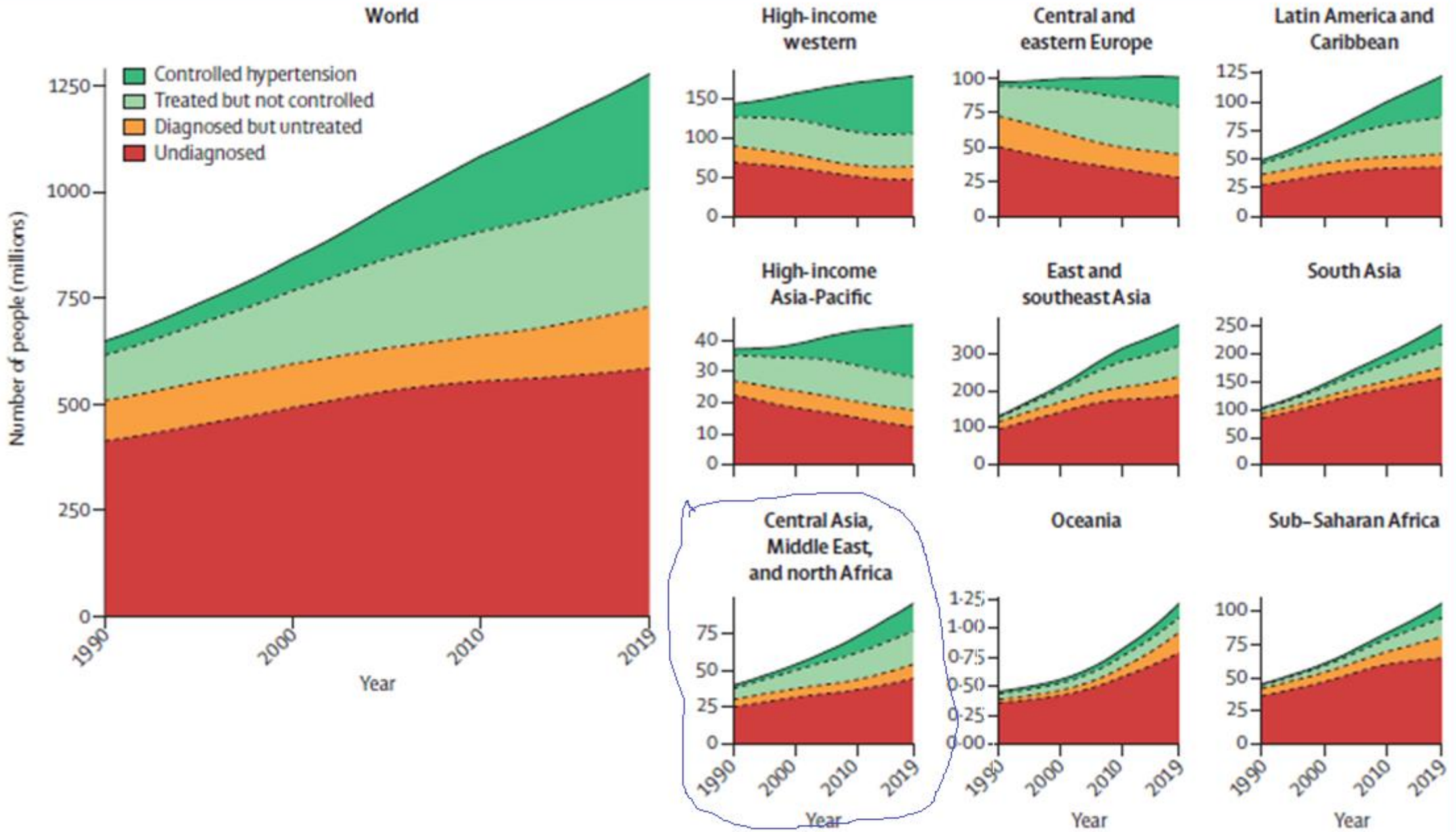


Figure 6: Trends in the number of people with hypertension who reported a diagnosis, who used treatment, and whose blood pressure was effectively controlled, globally and by region, 1990–2019

PREVALENCE OF HT IN IRAQ

- The World Health Organization (WHO) Eastern Mediterranean Region health statistics published in 2008 revealed that the prevalence of hypertension in Iraq for both sexes was 29.4% (20.4–38.9%)

Number of hypertensive patient visit health centers is 17.8 per 1000 according to ministry of health report -2021

جمهورية العراق
Republic of IRAQ

وزارة الصحة/البيئة
/Ministry of Health
Environment

جدول (6-30) معدل الامراض غير الانتقالية للمرضى المراجعين في المراكز الصحية لكل 1000 مراجعه حسب المحافظة

Table (6-30) rates of non-communicable diseases for 1000 outpatients in health care centers according to governorate

Health directorate	امراض القلب الناتجة عن القصور الدموي Ischemic heart diseases				ارتفاع ضغط الدم Hypertension				داء السكر Diabetus mellitus				دائرة الصحة
	المعدل Rate	المجموع Total	اناث Females	ذكور Males	المعدل Rate	المجموع Total	اناث Females	ذكور Males	المعدل Rate	المجموع Total	اناث Females	ذكور Males	
Total without Kurdistan region	0.11	2698	1216	1482	17.83	445235	237555	207680	14.73	367906	190326	177580	المجموع بدون اقليم كردستان

SELECT COUNTRY

SAUDI ARABIA
SENEGAL
SERBIA
SEYCHELLES
SIERRA LEONE
SINGAPORE
SLOVAKIA
SLOVENIA
SOLOMON ISL.
SOMALIA
SOUTH AFRICA
SOUTH KOREA
SOUTH SUDAN
SPAIN
SRI LANKA

IRAQ: HYPERTENSION

Deaths	%	Rate	World Rank
2,451	1.67	16.27	101

According to the latest WHO data published in 2020 Hypertension Deaths in Iraq reached 2,451 or 1.67% of total deaths. The age adjusted Death Rate is 16.27 per 100,000 of population ranks Iraq #101 in the world. Review other causes of death by clicking the links below or choose the full health profile.

SELECT COUNTRY

SAUDI ARABIA
SENEGAL
SERBIA
SEYCHELLES
SIERRA LEONE
SINGAPORE
SLOVAKIA
SLOVENIA
SOLOMON ISL.
SOMALIA
SOUTH AFRICA
SOUTH KOREA
SOUTH SUDAN
SPAIN
SRI LANKA

LEADING CAUSES OF DEATH IRAQ

Click each link to see data

WE HAVE THREE UNMET CHALLENGES IN HYPERTENSION

- Diagnosis
- Treatment
- Control

CHALLENGES IN CLINICAL DIAGNOSIS

The Assessment Of A Patient’s BP May Be Performed Using Different Methods, Including

- In-office BP (OBP) measurement
- Home Monitoring (HBPM)
- Ambulatory BP monitoring (ABPM) over 24 h.
- Other mean is automated unattended office BP measurement (AOBP)

(AOBP)

This approach, which involves multiple BP readings taken with a fully automated device in absence of health care personnel after the patient has been resting quietly alone for a few minutes, has been in particular proposed to avoid the white coat effect (WCE)

Office Blood Pressure Measurement Cannot Reflect The Actual Level Of BP For Several Causes

- ❖Blood pressure is not stationary but vary over 24 hrs.
- ❖ The relationships between systolic and diastolic pressure are not constant
- ❖The constitution of BP measurement
- ❖Pt anxiety.
- ❖Constraint of time in busy clinics

Note: The real intra-arterial pressure as measured in the aorta is different from what is measured in the peripheral pulsation which is effected by the vessel elasticity especially with aging &the intra arterial pressure was found have more relation to CV morbidity & mortality as proved by the study comparing Atenolol with losartan where the second shows more intra arterial pressure lowering

REF:Dahlof B etal Cardiovascular morbidity and mortality in the Losartan Intervention For

Endpoint reduction in hypertension study (LIFE): a randomized trial against atenolol. Lancet 2002;359:995–1003

HOW TO IMPROVE HYPERTENSION DIAGNOSIS SOLVING CHALLENGE-1

In most current hypertension guidelines, both HBPM and ABPM are

recommended in order to improve diagnosis and management of hypertension with indication to use them as complementary and not as alternative diagnostic methods

HBPM has experienced an exponential use because the availability of small , accurate, user-friendly and relatively inexpensive BP monitoring devices &can get a higher number of readings

2. Improvement of hypertension control

2. IMPROVEMENT OF HYPERTENSION CONTROL

Despite the availability of a wide range of safe and effective antihypertensive drugs, hypertension management remains suboptimal where regardless of global location, where in some studies **only 60%** of treated subjects achieving control of their BP values

The causes are:

A. Poor patients' adherence to long-term therapy .
B. Therapeutic inertia
C. Pharmacological regimens

A-POOR PATIENTS COMPLIANCE

The factors driving to non-adherence in a given patient can vary depending on the patient's profile, including:

- Fear of possible or experienced adverse events
- Lack of information
- Actual or perceived lack of treatment benefit
- Forgetfulness
- Complexity of dosing regimen and polypharmacy
- Cost

B- THERAPEUTIC INERTIA

Therapeutic inertia (defined as the failure to initiate therapy or to intensify or change therapy in patients with elevated BP values and a poor patient–physician communication are also contributing factors for failure to achieve BP targets

It should be noted that, therapeutic inertia is also influenced by factors related to the healthcare system, time constraints and workload pressure placed on physicians

As mentioned above BP control may be suboptimal also when its assessment is based on OBP values

WHAT ARE THE SOLUTIONS?

-Use of HBP monitoring for treatment titration, self-monitoring alone is not associated with lower BP values but in conjunction with interventions by nurse , doctor ,home personal ,who can take care of drug administration especially in the elderly .& BP measurement

Also encouraging them to be compliant with lifestyle modifications and prescribed antihypertensive therapy.

In general, BP values obtained by patients at home are reported in handwritten logbooks & discussed with his physician

Solution for other challenges will be discussed latter

C-Pharmacological regimens considering duration of action of antihypertensive drugs ,smoothing index and treatment simplification to improve 24 h BP control and to reduce BP variability

BP fluctuations over a 24h period are characterized by substantial reductions during sleep, a rapid rise upon awakening, and a variable magnitude during the awake state, depending on a person's activities and emotional state, The nocturnal BP is now recognized as superior to

daytime BP in predicting cardiovascular risk

Consequently, the most appropriate agents would be those with a duration of action of 24h or longer , which can be prescribed for once-daily dosing without compromising BP control at the end of the dosing period,

HOW TO ASSESS TREATMENT EFFICACY IN REDUCING BP VARIABILITY OVER 24 H

Two different approaches have been used to assess the ability of a given treatment to induce a smooth reduction of BP over 24 h, leading to a reduction in 24 h BP variability:

1- The assessment of trough : peak(T:P) ratio

mean change in SBP and DBP during the final hours of the 24 h dosing period (for example, in the 2 h before next dosing) /the peak value which is the mean change in SBP and DBP during the period when the BP change is maximal (for example, 2–8 h post dosing). So we choose a drug with trough to peak ratio near 1

2-The estimate of the smoothness index (SI).

The Smoothness index (SI) is aimed at providing information on both the degree of 24 h BP reduction and the distribution of such a reduction over the 24h period

There are many studies indicate for combination therapies of the angiotensin II receptor blockers with a diuretic or with a calcium channel blocker (CCB) were significantly higher than the values for monotherapies

These findings support the use of fixed-dose combinations of long-acting agents that individually have high SI values as they help to maintain homogeneous 24 h BP control

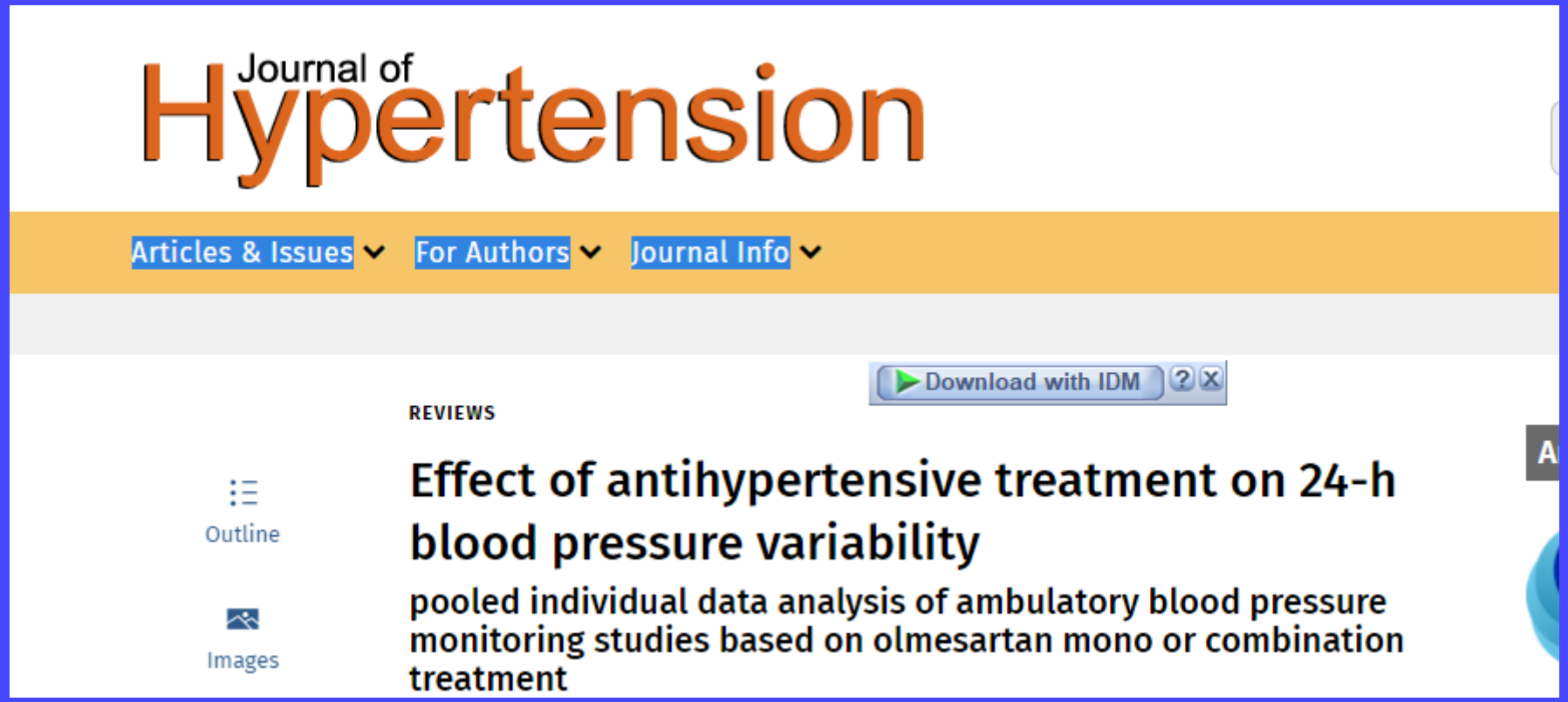
Hypertension Research (2014) 37, 187–193

www.nature.com/hr

REVIEW

Blood pressure variability over 24 h: prognostic implications and treatment perspectives. An assessment using the smoothness index with telmisartan–amlodipine monotherapy and combination

Gianfranco Parati[1,2] and Helmut Schumacher[3]



Conclusion:
Olmesartan plus a DCCB and/or a TD produces a larger, more sustained, and smoother BP reduction than placebo and monotherapies, a desirable feature for a more effective prevention of the cardiovascular consequences of uncontrolled hypertension.

International Journal of CARDIOLOGY

FULL LENGTH ARTICLE | VOLUME 331, P262-269, MAY 15, 2021

PDF

Current challenges for hypertension management: From better hypertension diagnosis to improved patients' adherence and blood pressure control

Gianfranco Parati • Carolina Lombardi • Martino Pengo • Grzegorz Bilo • Juan Eugenio Ochoa

Open Access • Published: February 03, 2021 • DOI: https://doi.org/10.1016/j.ijcard.2021.01.070 •

SUGGESTED SOLUTIONS & RECOMMENDATION FOR DIAGNOSIS &TREATMENT OF HYPERTENSION IN IRAQ

الحلول المقترحه لمواجهة هذه التحديات على مستوى العراق

وزارة التخطيط تقديراتها لعدد السكان في العراق خلال عام 2021

بلغ (41,190,658) مليون نسمة-

-الرصد

الجامعي -عدد الطلبـــة المقبولين	160013	148410	190292	233935	241268	247555
الجامعي -عدد الطلبة الموجودين	574997	608554	647770	743825	792553	846132
الجامعي - عدد أعضاء الهيئة التدريسية	35362	38643	41233	47951	49753	50791
الدراسات العليا - عدد الطلبة المقبولين	8449	1081	12145	13366	15359	19156
الدراسات العليا - عدد الطلبة الموجودين	24948	27359	29474	35055	39141	46232

عدد الموظفين=3 مليون نسمه

عدد طلبة ومنتسبوا الجامعات=2و1 مليون نسمه

المجموع=2و4مليون نسمه

المجموع تحت سن 19 سنه=اكثر من 21 مليون

تقديرات سكان العراق حسب الفئات العمرية الخمسية والبيئة والجنس لسنة 2021								
الفئة العمرية	حضر			ريف			مجموع	
	ذكور	اناث	مجموع	ذكور	اناث	مجموع	ذكور	اناث	مجموع
4-	2,075,034	1,963,130	4,038,164	1,027,555	977,906	2,005,461	3,102,589	2,941,036	6,043,625
9-	1,909,774	1,817,261	3,727,035	985,748	908,480	1,894,228	2,895,522	2,725,741	5,621,263
14-1	1,710,130	1,599,231	3,309,361	877,616	816,531	1,694,147	2,587,746	2,415,762	5,003,508
19-1	1,541,120	1,471,953	3,013,073	729,376	673,284	1,402,660	2,270,496	2,145,237	4,415,733

كيف نواجه هذه التحديات على مستوى العراق

معالجة تحدي التشخيص

*

1-الزام جميع الموظفين الحكوميين والبالغ عددهم أكثر من 3 مليون بفحص سنوي للضغط والسكر.

2-ألزام طلبة الجامعات وعددهم مليون وثلاث مئه بنفس الضوابط.

أن مجموع هاتين الشريحتين 4,5 مليون نسمه أي تشكل 25% من سكان العراق من هم فوق سن العشرين والذين يكون احتمال تواجد الضغط لديهم اكثر وهذه الأرقام هي من احصاء وزارة التخطيط وبذلك تحقق زيادة في رصد وتشخيص مرضى الضغط.

3- تفعيل برنامج رصد الأمراض المزمنة في المراكز الصحية.

4- زيادة دور الأعلام في التنبيه لمخاطر الضغط وسهولة التشخيص والمعالجة

ب- تحسين السيطرة في معالجة الضغط لدى الاشخاص الذين لديهم المرض

1-توفير الأدوية الخاصه لمرضى الضغط في العيادات الشعبية بأنسيابيه

2-الحد من تداول أدوية الضغط ذات المناشئ الغير رصينة

3-فتح صيدليه حكوميه واحدة في كل محافظة لغرض بيع الأدويه بسعر مناسب لمن لم يحصل على الأدوية من العيادات الشعبية

4-فتح عيادات خاصة لمرضى الضغط في المستشفيات لغرض المتابعة والسيطرة على الضغط ورصد مضاعفاته اسوة ببقيه مراكز السكر والثلاسيميا اللخ

Thank You

لوحة الزواج البابلي- لادوين لونك

The Royal Holloway College, University of London